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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,230	07/06/2000	Dario Barberis	Q-59991	4825

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EXAMINER	
BURCH, MELODY M	

ART UNIT	PAPER NUMBER
3683	

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/611,230	BARBERIS ET AL.	
	Examiner	Art Unit	
	Melody M. Burch	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 18 and 22 are objected to because of the following informalities: the phrase "one engine" in line 3 of claim 18 should be changed to --one main engine-- to maintain consistent terminology. Claim 22 is objected to due to its dependency from claim 18. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 18 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 18. The phrase "the slave control unit" in the last line of the claim is indefinite. It is unclear as to which slave control unit Applicant is referring to since a plurality of slave control units is previously claimed.

The remaining claim is indefinite due to their dependency from claim 18.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 12-16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al. in view of Fujioka et al.

Re: claims 12, 14, 15, and 21. Engle et al. disclose a communication and control system in combination with a railway train which comprises at least one main engine 26 and a plurality of carriages or wagons 30 as shown in figure 1, the communication and control system comprising: first and second bi-directional transmission lines between 128 and 132 and between 130 and 134 shown in figure 4 and disclosed in col. 6 lines 15-25 which extend parallel to and spaced from one another along the train; a main control 68 installed on the main engine and connected, in the main engine, to both the transmission lines via intervening elements and to brake control systems or devices 76,96 of the train as shown in figure 3; a plurality of slave control units disclosed in col. 6 lines 15-24 and in col. 6 lines 40-41 each of which is installed upon a respective carriage or wagon and is connected, in the respective carriage or wagon, via intervening elements to both the transmission lines, to valve units included within element 90 associated with pneumatic brake actuators as disclosed in col. 5 lines 39-52 (within one particular carriage or wagon Applicant shows a slave control unit being connected to a singular pneumatic brake actuator. However since Applicant claims a connection of each slave control unit to pneumatic brake actuators (plural), Examiner has interpreted the connections in the respective carriages or wagons as referring to connections in each respective carriage or wagon to the brake actuators and other system devices by

way of intervening elements), two sensor devices 72,84 associated with the respective carriage or wagon via element 68, the transmission lines, and other intervening elements; the main control unit and the slave control units being arranged to communicate with one another via the transmission lines according to a predetermined serial protocol as disclosed in col. 6 lines 15-25; the main control unit being arranged to transmit the slave control units brake control signals of serial type, and to receive and acquire information or state signals likewise or serial type from the slave control units via at least one of the transmission lines as disclosed in col. 6 lines 15-24, but does not specifically disclose that the electrically operated valve units are solenoid valve units associated with the brake actuators.

Fujioka et al. teach the well-known use of solenoid valve units associated with brake actuators in col. 9 lines 13-14. Solenoid valves are conventionally used in association with brake actuators for improved switching speeds and widespread availability. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the brake actuators of Engle et al. with solenoid valve units, as taught by Fujioka et al., in order to provide a means of reliably controlling brake pressure in the brake pipe.

Re: claims 13 and 16. Engle et al. teach in figure 2 the use of a lead or main engine 26 and at least one further auxiliary engine 28, the auxiliary engine 28 being also provided with the control unit 68 capable of acting as a slave unit and arranged to receive synchronization signals coming from the control unit of the lead engine and to

transmit information or state signals to the control unit of the lead engine via at least one of the transmission lines.

6. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al. in view of Fujioka et al. as applied to claim 12 above, and further in view of Hsien et al.

Engle et al., as modified, lack the specifically claimed communication and control system arrangement.

Hsien et al. teach in figure 2 the use of a control system wherein slave control units 20 disclosed in col. 2 lines 50-51 for the devices 21'-24' are arranged to acquire and transmit signals on one or the other transmission line 31,32 equally, and are moreover operable when they receive a transfer command signal to transfer to the other transmission line signals received on one line, the main control unit 10 being arranged to detect a condition in which the transmission lines 31,32 are both interrupted each between different pairs of slave control units and in such a case to send transfer command signal to at least two slave control units from among those in which there is an interruption of one of the transmission lines in such a way that all the slave control units are able to communicate with the main control units via a provisional transmission line comprising portions of both the transmission lines 31,32 and the slave control units 20 which have been sent the transfer command signal as disclosed in abstract lines 2-4 from the bottom.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the communication and control system

arrangement of Engle et al., as modified, to have included an arrangement, as taught by Hsien et al., in order to provide a level of redundancy in the communication system.

7. Claims 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al. in view of Fujioka et al. and Hsien et al. as applied to claim 17 above, and further in view of GB-2312260.

Engle et al. is silent as to how the system is powered. GB-2312260 teaches in figure 1 the use of electrical power supply devices Bat. 1 and Bat. 2 to distribute power.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Engle et al., as modified, with electrical power supply devices, as taught by GB-2312260, in order to provide an old and well-known means of driving the control system.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engle et al. in view of Fujioka et al. as applied to claim 12 above, and further in view of Hsien et al. and Larsen.

Engle et al., as modified, lack the limitation of the transmission lines being operable to transmit electrical power and serial type signals simultaneously and lack the limitation of the lines being traveling wave lines.

Hsien et al. teach a control system comprising the use of lines operable to transmit electrical power and control signals simultaneously in col. 2 lines 49-53 with regards to the use of power line carrier communication technology and in col. 3 lines 51-53.

Larsen teaches in col. 4 lines 62-63 the use of a travelling wave type transmission line.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the transmission lines of Engle et al., as modified, to transmit both power and control signals simultaneously, as taught by Hsien et al., in order to reduce the number of lines needed in the system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the transmission lines of Engle et al., as modified, to be of the traveling wave type, as taught by Larsen, in order to provide an alternate means of transmitting signals from the main control unit to the slave control units.
It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the lines of Engle et al., as modified, to be twin wires which

is a well-known line construction, in order to provide improved structural integrity of the lines.

Response to Arguments

9. Applicant's arguments filed 9/16/04 have been fully considered but they are not persuasive.

Applicant argues that the "elements relied upon by the Examiner in Engle et al. are not slave control units but are sensors". Examiner notes that paragraph 5 on pg. 6 of the Office Action refers to a plurality of slave control units disclosed in col. 6 lines 15-24 and in col. 6 lines 40-41 of Engle et al. Examiner particularly directs Applicant's attention to col. 6 lines 36-41 in which it is disclosed that one of the units is considered the master unit and all other units in the train are designated slave units. Examiner maintains that the elements relied upon by the Examiner are slave control units as clearly disclosed by Engle et al.

The Fujioka reference is used solely for the teaching of the use of a brake control system with valve units associated with brake actuators inherently having brake cylinders specifically being of the solenoid type.

With regards to the rejections involving the Hsien reference, Examiner notes that it would have been obvious to one of ordinary skill in the railway brake control art to have looked to another control scheme for a teaching of the specific communication control requirements set forth in claim 17. Although the control scheme of the Hsien reference is in the environment of a traffic light, Examiner notes that the Hsien reference is used solely for the teachings of the specific communication control which is

reasonably pertinent to the particular problem with which the Applicant is concerned since it involves a scheme providing control redundancy which results in improved system safety.

Accordingly, the above rejections have been maintained.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mmb
November 29, 2004
Melody M. Burch
11/29/04

MATTHEW C. GRAHAM
PRIMARY EXAMINER
GROUP 310